brenell

Transistorised Tape Recorders
ST 200 (Two Track) ST 400 (Four Track)

Designed and produced by electronic and mechanical engineers with unrivalled experience in producing some of the world's finest tape recorders, the Brenell ST400 (Four track) and ST 200 (Two track) transistorised tape recorders fulfil all the essential requirements of fidelity in recording and playback quality, ample playback power, reliability, easy operation, robust construction, and smart styling.
The mechanically sound design of the tape transport (tape deck) results in a completely reliable 'work horse' capable of continuous, efficient and silent operation over extended periods without attention. Some Brenell decks are called upon for 24 hours a day operation.
Three high-quality outer rotor motors are used. A heavy, dynamically balanced flywheel is driven at a constant speed by a hysteresis synchronous motor, the speed of which is locked to the frequency of the mains supply and unaffected by voltage fluctuations. Tape speeds of 7½", 3¾" and 1⅞" are obtained through noiseless gearing.
All levers and linkages are generously proportioned to be firm and positive in operation, and for long maintenance-free life.
Exceptional quality in terms of recording and playback characteristics combined with a high power output potential have been achieved by the use of advanced silicon transistor circuitry in amplifying systems, which ensures consistent performance virtually free from inherent noise. The quasi-complementary output stages produce a clean 6 watts RMS, equivalent to 8 watts music power, per channel.
To meet the varying individual tastes, bass and treble controls are provided, and at the request of many recording enthusiasts, these controls are effective during both recording and playback. A 'level' position is indicated for use when recording compensation is not required. Recording levels are indicated on two VU meters.
Simplicity of operation has been achieved by using push-button switches to select the following functions:

- Record mono on upper track
- Record mono on lower track
- Record stereo
- Monitor during mono recording (the other channel's amplifier may be switched in to monitor the signal being recorded)
- Replay a mono signal, either track, into both loudspeakers
- Combine both tracks for reproduction by both loudspeakers
- Replay stereo tapes

Two pairs of input sockets are fitted. One, for low level signals i.e. as obtained from microphones, and another, for higher level signals such as obtainable from radio receivers, Hi-Fi amplifiers, etc.
Three pairs of output sockets make available the following facilities:

- 'Hi-Fi' Outputs for driving an external HiFidelity amplifier for replay purposes (Signal compensated for 'flat' response)
- 'Monitor' Outputs for driving any impedance headphones whilst recording or replaying, or for driving an external amplifier requiring a higher signal level than that which is available from the Hi-Fi outlet.
- 'Loudspeakers' Outputs for driving external loudspeakers of 15 ohms impedance (the internal loudspeakers are automatically switched-off when external speakers are plugged into circuit).

Specifications

Three Tape Speeds
7½, 3¾, 1⅞ ips.
Three Motors
All outer rotor (Hysteresis Synchronous for Capstan drive).
Spool Sizes
Accommodates all spools up to 8½" dia.
Wow and Flutter
Measured on Gaumont Kalee w/f meters:
Less than 0.08% at 7½ ips.
0.1% at 3¾ ips.
0.12% at 1⅞ ips.
(The large, dynamically balanced flywheel driven by the H.S. motor ensures maintenance of these excellent figures)
Lockable Pause Mechanism
Newly designed, lever operated. Positive action with very light operational pressure.
Auto Stop
End of tape (or tape breakage).
Place Indicator
4 digit counter.
Back Tension
Adjustable for optimum pressure according to spool diameter.
Heads
Erase—Double gap erase head to increase erasure efficiency.
R/PB—Low cross talk R/PB head suitable for both mono and stereo recordings.
Inputs 2 x microphone
For 200 ohm impedance microphones, dynamic or ribbon.
Sensitivities 50 microvolts (overload better than 30B).
2 x radio
Impedance 220,000 ohms.
Sensitivities 40 millivolts (overload better than 30dB).
Outputs 2 x Hi-Fi
200 millivolts into 47,000 ohms load (for replay via Hi-Fi amplifier systems).
2 x Monitor
2 volts. Impedance 100 ohms.
(Suitable for use with low, medium and high impedance headphones and as a high level output for use with external amplifiers).
2 x Loudspeaker
For driving external Loudspeakers of 15 ohms impedance (Internal speakers disconnected when plug is inserted).

Power Output
An RMS output, from each amplifier, of 6 watts (Equivalent to an 8 watts per channel music rating).
Frequency Responses
7½ ips ± 2 dB 40 Hz to 14000 Hz
3¾ ips ± 2 dB 40 Hz to 11000 Hz
1⅞ ips ± 2 dB 40 Hz to 5000 Hz
Tone Controls
Separate Bass and Treble controls
Bass—14 dB to + 10 dB at 100 Hz
Treble—18dB to + 5 dB at 10000 Hz
(Available for use on Record and Replay)
Signal to Noise Ratio
56 dB weighted.
Bias Frequency
100 KHZ.
Recording Level Indicators
Separate VU meter for each track.
Crosstalk Rejection
Better than —60 dB — measured at 1000 Hz when recording one track at full level (3% third harm) with HF bias on the second track. After recording, the second track is reproduced.
Push Button Operation
Of Record and Replay amplifier functions, track selection and monitoring facilities.
Cabinet
Wooden Cabinet, detachable. Finish—dark grey with Teak front.
Weight
33 lbs.
Power Supplies
All models suitable for 110-240 v 50 c/s.
60 c/s models to order.
Dimensions
17" x 15½" x 7"
(43 x 39 x 18 cms)

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